



## 2021 International Building Code Update

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- 30 years in Building Code Enforcement and Administration
- Combination Building Inspector since 1991
- Plans Examiner since 1996
- Recovering CBO, 8 years with City of Lakewood
- Code consultant, inspector, plans examiner, instructor with CCC & Shums Coda Associates 6 + years
- ICC Instructor 4+ years
- Past member ICC IEBC Committee during 2009 & 2012 code cycle and reappointed to committee for 2024 cycle
- Past member ICC IBC General Committee during 2015 code cycle

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### What are we going to talk about?

- Discuss the major changes between the 2018 and 2021 International Building Code
- Nonstructural provisions only
- Background behind the changes
- Practical Application of the new requirements

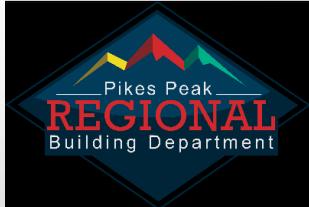


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### 103.1 Creation of enforcement agency

- The [INSERT NAME OF DEPARTMENT] is hereby created and the official in charge thereof shall be known as the building official.
- The function of the agency shall be the implementation, administration and enforcement of the provisions of this code.



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### 110.3.5 Types IV-A, IV-B and IV-C connection protection inspection



- In buildings of Types IV-A, IV-B and IV-C construction, where connection fire-resistance ratings are provided by wood cover calculated to meet the requirements of Section 2304.10.1, inspection of the wood cover shall be made after the cover is installed, but before any other coverings or finishes are installed.

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### 110.3.7 Weather-exposed balcony and walking surface waterproofing

- Where balconies or other elevated walking surfaces have weather-exposed surfaces, and the structural framing is protected by an impervious moisture barrier, all elements of the impervious moisture barrier system shall not be concealed until inspected and approved.



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## 113 MEANS OF APPEALS



- In order to hear and decide appeals of orders, decisions or determinations made by the building official relative to the application and interpretation of this code, there shall be and is hereby created a board of appeals.
- The board of appeals shall be appointed by the applicable governing authority and shall hold office at its pleasure.
- The board shall adopt rules of procedure for conducting its business and shall render all decisions and findings in writing to the appellant with a duplicate copy to the building official.

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### 113.4 Administration

- The building official shall take immediate action in accordance with the decision of the board.



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## 202 Definitions



- ATRIUM.
- A vertical space that is closed at the top, connecting two or more stories in Group I-2 and I-3 occupancies or three or more stories in all other occupancies.

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## 202 Definitions

- CHANGE OF OCCUPANCY.
- Either of the following shall be considered as a change of occupancy where this code requires a greater degree of safety, accessibility, structural strength, fire protection, means of egress, ventilation or sanitation than is existing in the current building or structure:
  - 1. Any change in the occupancy classification of a building or structure.
  - 2. Any change in the purpose of, or a change in the level of activity within, a building or structure.



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## 202 definitions



- MASS TIMBER.
- Structural elements of Type IV construction primarily of solid, built-up, panelized or engineered wood products that meet minimum cross-section dimensions of Type IV construction.

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## 202 Definitions

- NAILABLE SUBSTRATE.
- A product or material such as framing, sheathing or furring, composed of wood, wood-based materials or other materials providing equivalent fastener withdrawal resistance.

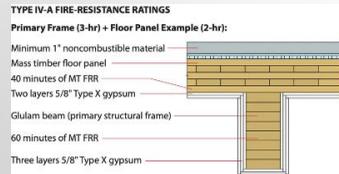


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## 202 Definitions



- **NONCOMBUSTIBLE PROTECTION (FOR MASS TIMBER).**
- Noncombustible material, in accordance with Section 703.6, designed to increase the fire-resistance rating and delay the combustion of mass timber.

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## 202 Definitions

- **PENTHOUSE.**
- An enclosed, unoccupied rooftop structure used for sheltering mechanical and electrical equipment, tanks, elevators and related machinery, stairways, and vertical shaft openings.



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## Definitions 202 Positive Roof Drainage

- A design that accounts for deflections from all design loads and has sufficient additional slope to ensure that drainage of the roof occurs with 48 hours or precipitation



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## 202 Definitions

- **PUZZLE ROOM.**
- A puzzle room is a type of special amusement area in which occupants are encouraged to solve a challenge to escape from a room or series of rooms.



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## 202 Definitions

- PRIMARY STRUCTURAL FRAME.
- The primary structural frame shall include all of the following structural members:

- 4. Bracing Members that are essential to the vertical stability of the *primary structural frame* under gravity loading.



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## 202 Definitions



- SECONDARY STRUCTURAL MEMBERS.
- The following structural members shall be considered secondary members and not part of the primary structural frame:

- 3. Bracing members that are not designated as part of a primary structural frame or bearing wall.

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## Definitions 202 Special Amusement area

- Any temporary or permanent building or portion thereof that is occupied for amusement, entertainment or educational purposes and is arranged in a manner that:
- Make the MOE not readily apparent due to visual or audio distractions
- Intentionally confounds identification or the MOE
- Otherwise makes the MOE not readily visible because of the nature of the attraction or mode of conveyance through the building or structure

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## Definitions 202 Strength ( 2 definitions now)

- For Chapter 16:
- Nominal strength: The capacity of a structure or member to resist loads....
- Required strength: Strength of a member, cross section or connection required to resist factored loads...
- Strength design:

- For Chapter 21:
- Design strength
- Nominal strength
- Required strength

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### 306.2 Moderate-hazard factory industrial, Group F-1 (higher risk category)

- Factory industrial uses that are not classified as Factory Industrial F-2 Low Hazard shall be classified as F-1 Moderate Hazard and shall include, but not be limited to, the following:
  - Energy storage systems (ESS) in dedicated use buildings
  - Water/sewer treatment facilities
  - Aircraft manufacturing facilities



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### 307.1.1 Uses other than Group H (19 categories that are not group H)

- An occupancy that stores, uses or handles hazardous materials as described in one or more of the following items shall not be classified as Group H, but shall be classified as the occupancy that it most nearly resembles.
  - 18. Distilling or brewing of beverages conforming to the requirements of the International Fire Code.
  - 19. The storage of beer, distilled spirits and wines in barrels and casks conforming to the requirements of the International Fire Code.



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### 309.3 Motor fuel-dispensing facilities

- Shall comply with Section 406.7
- Fueling pad
- Canopy height and construction materials
- Plastics



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### 311.2 Moderate-hazard storage, Group S-1

- Storage Group S-1 occupancies are buildings occupied for storage uses that are not classified as Group S-2, including, but not limited to, storage of the following:
  - Beverages over 16-percent alcohol content
  - Public Parking garages open or enclosed



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## 312 Utility and miscellaneous U

- Private garages and carports in compliance with 406.3
- Residential aircraft hangars associated with one or two-family dwellings in compliance with 412.4... (just plane living good.....)



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## 403.3.2 Water supply to required fire pumps



- In all buildings that are more than 420 feet in building height and buildings of Type IVA and IVB construction that are more than 120 feet in building height, required fire pumps shall be supplied by connections to not fewer than two water mains located in different streets.

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## 404 ATRIUMS

- The provisions of Sections 404.1 through 404.11 shall apply to buildings containing atriums.
- Atriums are not permitted in buildings or structures classified as Group H.
  - Exception: Vertical openings that comply with Sections 712.1.1 through 712.1.3, and Sections 712.1.9 through 712.1.14.

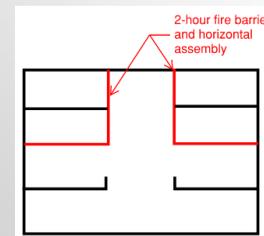


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## 404.5 Smoke control



- A smoke control system shall be installed in accordance with Section 909.
  - Exceptions:
    - 2. A smoke control system is not required for atriums connecting more than two stories when all of the following are met:
      - 2.1. Only the two lowest stories shall be permitted to be open to the atrium.
      - 2.2. All stories above the lowest two stories shall be separated from the atrium in accordance with the provisions for a shaft in Section 713.4.

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## 404.6 Enclosure of atriums

- New Exceptions:

- 5. A horizontal assembly is not required between the atrium and openings for escalators complying with Section 712.3.3.
- 6. A horizontal assembly is not required between the atrium and openings for exit access stairways and ramps complying with Item 4 of Section 1019.3.



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## 404.10 Exit stairways in an Atrium

- All the following shall be met:
  1. Entry to the stairway is the edge of the closest riser
  2. Entry of the exit stairway shall have access from a minimum of 2 directions
- Distance between entry to an exit stairway in the atrium and entrance to a minimum of one exit stairway enclosed in accordance with 1023.2 shall comply with separation as per 1007.1.1
- Not more than 50% of the exit stairways shall be located in the same atrium



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## 406.6.4 Mechanical-access enclosed parking garages

- Mechanical-access enclosed parking garages shall be in accordance with Sections 406.6.4.1 through 406.6.4.4.



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## 406.6.4.1 Separation

- Mechanical-access enclosed parking garages shall be separated from other occupancies and accessory uses by not less than 2-hour fire barriers or by not less than 2-hour horizontal assemblies, or both.



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### 406.6.4.2 Smoke removal

- A mechanical smoke removal system, installed in accordance with Section 910.4, shall be provided for all areas containing a mechanical-access enclosed parking garage.



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### 406.6.4.3 Fire control equipment room

- Fire control equipment, consisting of the fire alarm control unit, mechanical ventilation controls and an emergency shutdown switch, shall be provided in a room located where the equipment is able to be accessed by the fire service from a secured exterior door of the building.
- The room shall be not less than 50 square feet in area and shall be in a location that is approved by the fire code official.



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### 406.6.4.3.1 Emergency shutdown switch

- The mechanical parking system shall be provided with a manually activated emergency shutdown switch for use by emergency personnel.
- The switch shall be clearly identified and shall be in a location approved by the fire code official.



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### 406.6.4.4 Fire department access doors

- Access doors shall be provided in accordance with Section 3206.7 of the International Fire Code.



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## 407.2.7 Domestic cooking appliances in Group I-2

- In Group I-2, installation of cooking appliances used in domestic cooking facilities shall comply with all of the following:
  - Types of cooking appliance permitted shall be limited to ovens, cooktops, ranges, warmers and microwaves
  - Domestic cooking hoods installed & constructed in accordance with 505 of the IMC shall be provided over cooktops and ranges
  - Cooktops and ranges shall be protected in accordance with Section 904.14. (alternative automatic fire-extinguishing systems)
- 4. A shut off for the fuel and electrical power supply to the cooking equipment shall be provided in a location to which only the staff has access.
- 5. A timer shall be provided that automatically deactivates the cooking appliance within a period of not more than 120 minutes
- 6. A portable fire-extinguisher shall be provided. Installation shall be in accordance with Section 906, and the extinguisher shall be located within a 30 foot distance of travel from each domestic cooking appliance.

### Exceptions:

- Cooktops within smoke compartments with no patient sleeping rooms
- cooktops for care recipient training or nutritional counseling are not required to comply with item 3 above.

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## Group I-2 407.3.1.1 Door construction



- Doors in corridors not required to have a fire protection rating shall comply with the following:
  - Solid doors shall have close-fitting operational tolerances, head and jamb stops.
  - Dutch-style doors shall have an astragal, rabbet or bevel at the meeting edges of the upper and lower door sections. Both the upper and lower door sections shall have latching hardware. Dutch-style doors shall have hardware that connects the upper and lower sections to function as a single leaf.
  - To provide makeup air for exhaust systems in accordance with Section 1020.7, Exception 1, doors are permitted to have louvers or have a clearance between the bottom of the door and the floor surface that is 2/3 inch maximum.

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## 407.4.4.3 Access to corridor

- Every care suite shall have a door leading directly to an exit access corridor or horizontal exit.
- Movement from habitable rooms within a care suite shall not require more than 100 feet of travel within the care suite to a door leading to the exit access corridor or horizontal exit.
- Where a care suite is required to have more than one exit access door by Section 407.4.4.5.2 or 407.4.4.6.2, the additional door shall lead directly to an exit access corridor, exit or an adjacent suite.



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## 407.6.1 Activation of automatic-closing doors



- Automatic-closing doors on hold-open devices in accordance with Section 716.2.6.6 shall also close upon activation of a fire alarm system, an automatic sprinkler system, or both.
- The automatic release of the hold-open device on one door shall release all such doors within the same smoke compartment.

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## 411.5 Special Amusement Areas Puzzle room exiting

- Puzzle room exiting shall comply with one of the following:
  1. Exiting in accordance with Chapter 10.
  2. An alternative design approved by the building official.
  3. Exits shall be open and readily available upon activation by the automatic fire alarm system, automatic sprinkler system, and a manual control at a constantly attended location.



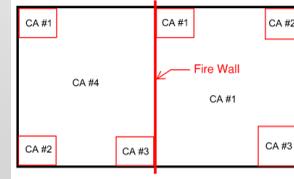
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## 414.2.3 Hazardous Materials Number

- The maximum number of control areas within a building shall be in accordance with Table 414.2.2.
- For the purposes of determining the number of control areas within a building, each portion of a building separated by one or more fire walls complying with Section 706 shall be considered a separate building.



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## Live work units

- Was in 419 now in chapter 5 Section 508.5--- No technical changes just location



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## 419 Now "Artificial Decorative Vegetation"

- If exceeding 6 feet in height and permanently installed outdoors within 5 feet of the building or on the roof it shall comply with Section 321.1 of the IFC
- Exception: located more than 30feet from the exterior wall of a building.



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## 422.7 Ambulatory Care Facilities Domestic cooking

- Installation of cooking appliances used in domestic cooking facilities shall comply with all of the following:
  1. The types of cooking appliances permitted are limited to ovens, cooktops, ranges, warmers and microwaves.
  2. Domestic cooking hoods installed and constructed in accordance with Section 505 of the International Mechanical Code shall be provided over cooktops or ranges.



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## 422.7 Domestic cooking

- 3. A shutoff for the fuel and electrical supply to the cooking equipment shall be provided in a location to which only staff has access.
- 4. A timer shall be provided that automatically deactivates the cooking appliances within a period of not more than 120 minutes.
- 5. A portable fire extinguisher shall be provided. Installation shall be in accordance with Section 906 and the extinguisher shall be located within a 30-foot distance of travel from each domestic cooking appliance.



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## 423 Storm Shelters

- Applies where storm shelters are required. Design of structures for shelters after the storm event are outside of ICC 500 and shall comply with Table 1604.5 as a Risk Category IV structure.
- Storm shelters shall be constructed in accordance with the IBC and ICC 500 as designed as Hurricane or Tornado structures or combined hurricane and tornado structures.
- Storm shelter shall be classified as Occupancy Group A-3. For less than 50 occupants it shall be classified as per Section 303 (B)
- Where storm shelters are constructed as a room or space within a host building that will normally be occupied for other purposes, the requirements of this code for the occupancy of the building or individual rooms shall apply unless otherwise required by ICC 500.

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## 424.2 Play Structure Materials

- Play structures shall be constructed of noncombustible materials or of combustible materials that comply with the following:
  10. Interior finishes for structures exceeding 600 square feet in area or 10 feet in height shall have a flame spread index not greater than that specified in Table 803.13 for the occupancy group and location designated. Interior wall and ceiling finish materials tested in accordance with NFPA 286 and meeting the acceptance criteria of Section 803.1.1.1, shall be permitted to be used where a Class A classification in accordance with ASTM E84 or UL 723 is required.



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## 424.5 Area limits

- Play structures shall be not greater than 600 square feet in area, unless a special investigation, acceptable to the building official, has demonstrated adequate fire safety.



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## 424.5.1 Design

- Play structures exceeding 600 square feet in area or 10 feet in height shall be designed in accordance with Chapter 16.



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## 503.1.4 Occupied roofs

- Added language:
  - An occupied roof shall not be included in the building height or number of stories as regulated by Section 504, provided that the penthouses and other enclosed rooftop structures comply with Section 1511.



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## 503.1.4 Occupied roofs

- 1. The occupancy located on an occupied roof shall not be limited to the occupancies allowed on the story immediately below the roof where the building is equipped throughout with an automatic sprinkler system in accordance with Section 903.3.1.1 or 903.3.1.2 and occupant notification in accordance with Sections 907.5.2.1 and 907.5.2.3 is provided in the area of the occupied roof. Emergency voice/alarm communication system notification per Section 907.5.2.2 shall also be provided in the area of the occupied roof where such system is required elsewhere in the building.



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### Table 504.3 Height in feet

TABLE 504.3  
ALLOWABLE BUILDING HEIGHT IN FEET ABOVE GRADE PLANE<sup>a</sup>

OCCUPANCY CLASSIFICATION	See Footnotes	TYPE OF CONSTRUCTION											
		Type I		Type II		Type III		Type IV			Type V		
		A	B	A	B	A	B	A	B	C	HT	A	B
A, B, E, F, M, S, U	NS <sup>b</sup>	UL	160	65	55	65	55	65	65	65	65	50	40
	S	UL	180	85	75	85	75	270	180	85	85	70	60
H-1, H-2, H-3, H-5	NS <sup>c,d</sup>	UL	160	65	55	65	55	120	90	65	65	50	40
	S	UL	180	85	75	85	75	140	100	85	85	70	60
H-4	NS <sup>c,d</sup>	UL	160	65	55	65	55	65	65	65	65	50	40
	S	UL	180	85	75	85	75	140	100	85	85	70	60
I-1 Condition 1, I-3	NS <sup>c,e</sup>	UL	160	65	55	65	55	65	65	65	65	50	40
	S	UL	180	85	75	85	75	180	120	85	85	70	60
I-1 Condition 2, I-2	NS <sup>c,f,1</sup>	UL	160	65	55	65	55	65	65	65	65	50	40
	S	UL	180	85	75	85	75	180	120	85	85	70	60
I-4	NS <sup>c,g</sup>	UL	160	65	55	65	55	65	65	65	65	50	40
	S	UL	180	85	75	85	75	180	120	85	85	70	60
R <sup>h</sup>	NS <sup>g</sup>	UL	160	65	55	65	55	65	65	65	65	50	40
	S13D	60	60	60	60	60	60	60	60	60	60	50	40
	S13R	60	60	60	60	60	60	60	60	60	60	60	60
	S	UL	180	85	75	85	75	270	180	85	85	70	60

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### Table 504.4 Height in Stories

TABLE 504.4  
ALLOWABLE NUMBER OF STORIES ABOVE GRADE PLANE<sup>a,b</sup>

OCCUPANCY CLASSIFICATION	See Footnotes	TYPE OF CONSTRUCTION												
		Type I		Type II		Type III		Type IV			Type V			
		A	B	A	B	A	B	A	B	C	HT	A	B	
A-1	NS	UL	5	3	2	3	2	3	3	3	3	3	2	1
	S	UL	6	4	3	4	3	9	6	4	4	4	3	2
A-2	NS	UL	11	3	2	3	2	3	3	3	3	3	2	1
	S	UL	12	4	3	4	3	18	12	6	4	3	2	
A-3	NS	UL	11	3	2	3	2	3	3	3	3	3	2	1
	S	UL	12	4	3	4	3	18	12	6	4	3	2	
A-4	NS	UL	11	3	2	3	2	3	3	3	3	3	2	1
	S	UL	12	4	3	4	3	18	12	6	4	3	2	
A-5	NS	UL	UL	UL	UL	UL	UL	1	1	1	1	UL	UL	UL
	S	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL
B	NS	UL	11	5	3	5	3	5	5	5	5	5	3	2
	S	UL	12	6	4	6	4	18	12	9	6	4	3	
E	NS	UL	5	3	2	3	2	3	3	3	3	3	1	1
	S	UL	6	4	3	4	3	9	6	4	4	4	2	2
F-1	NS	UL	11	4	2	3	2	3	3	3	3	4	2	1
	S	UL	12	5	3	4	3	10	7	5	5	5	3	2
F-2	NS	UL	11	5	3	4	3	5	5	5	5	5	3	2
	S	UL	12	6	4	5	4	12	8	6	6	4	3	

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### Table 506.2 Allowable Areas

TABLE 506.2  
ALLOWABLE AREA FACTOR (A, = NS, S1, S13R, S13D or SM, as applicable) IN SQUARE FEET<sup>a</sup>

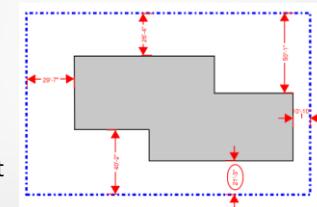
OCCUPANCY CLASSIFICATION	SEE FOOTNOTES	TYPE OF CONSTRUCTION											
		Type I		Type II		Type III		Type IV			Type V		
		A	B	A	B	A	B	A	B	C	HT	A	B
A-1	NS	UL	UL	15,500	8,500	14,000	8,500	45,000	30,000	18,750	15,000	11,500	5,500
	S1	UL	UL	62,000	34,000	56,000	34,000	180,000	120,000	75,000	60,000	46,000	22,000
	SM	UL	UL	46,500	25,500	42,000	25,500	135,000	90,000	56,250	45,000	34,500	16,500
A-2	NS	UL	UL	15,500	9,500	14,000	9,500	45,000	30,000	18,750	15,000	11,500	6,000
	S1	UL	UL	62,000	38,000	56,000	38,000	180,000	120,000	75,000	60,000	46,000	24,000
	SM	UL	UL	46,500	28,500	42,000	28,500	135,000	90,000	56,250	45,000	34,500	18,000
A-3	NS	UL	UL	15,500	9,500	14,000	9,500	45,000	30,000	18,750	15,000	11,500	6,000
	S1	UL	UL	62,000	38,000	56,000	38,000	180,000	120,000	75,000	60,000	46,000	24,000
	SM	UL	UL	46,500	28,500	42,000	28,500	135,000	90,000	56,250	45,000	34,500	18,000
A-4	NS	UL	UL	15,500	9,500	14,000	9,500	45,000	30,000	18,750	15,000	11,500	6,000
	S1	UL	UL	62,000	38,000	56,000	38,000	180,000	120,000	75,000	60,000	46,000	24,000
	SM	UL	UL	46,500	28,500	42,000	28,500	135,000	90,000	56,250	45,000	34,500	18,000
A-5	NS	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL
	S1	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL
	SM	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL	UL
B	NS	UL	UL	37,500	23,000	28,500	19,000	108,000	72,000	45,000	36,000	18,000	9,000
	S1	UL	UL	150,000	92,000	114,000	76,000	432,000	288,000	180,000	144,000	72,000	36,000
	SM	UL	UL	112,500	69,000	85,500	57,000	324,000	216,000	135,000	108,000	54,000	27,000

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### 506.3.2 Minimum frontage distance

- The frontage increase shall be based on the smallest public way or open space that is 20 feet or greater, and the percentage of building perimeter having a minimum 20 feet public way or open space.



Perimeter with > 20' yard = 364'  
 Total Perimeter = 406'  
 $364/406 = 90\%$   
 Smallest Yard = 21' 3"

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## 506.3.3 Amount of increase

The area factor increase based on frontage shall be determined in accordance with Table 506.3.3.

TABLE 506.3.3  
FRONTAGE INCREASE FACTOR\*

PERCENTAGE OF BUILDING PERIMETER	OPEN SPACE (feet)			
	0 to less than 20	20 to less than 25	25 to less than 30	30 or greater
0 to less than 25	0	0	0	0
25 to less than 50	0	0.17	0.21	0.25
50 to less than 75	0	0.33	0.42	0.50
75 to 100	0	0.50	0.63	0.75

90% Building Perimeter  
Yard Dimension = 21' 3"  
Frontage Increase = 50%

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## 506.3.3.1 Section 507 buildings

Where a building meets the requirements of Section 507, as applicable, except for compliance with the minimum 60-foot public way or yard requirement, the area factor increase based on frontage shall be determined in accordance with Table 506.3.3.1.

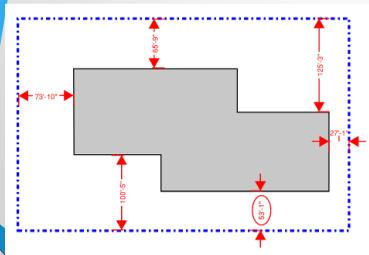
TABLE 506.3.3.1  
SECTION 507 BUILDINGS\*

PERCENTAGE OF BUILDING PERIMETER	OPEN SPACE (feet)					
	30 to less than 35	35 to less than 40	40 to less than 45	45 to less than 50	50 to less than 55	55 to less than 60
0 to less than 25	0	0	0	0	0	0
25 to less than 50	0.29	0.33	0.38	0.42	0.46	0.50
50 to less than 75	0.58	0.67	0.75	0.83	0.92	1.00
75 to 100	0.88	1.00	1.13	1.25	1.38	1.50

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TABLE 506.3.3.1  
SECTION 507 BUILDINGS\*

PERCENTAGE OF BUILDING PERIMETER	OPEN SPACE (feet)					
	30 to less than 35	35 to less than 40	40 to less than 45	45 to less than 50	50 to less than 55	55 to less than 60
0 to less than 25	0	0	0	0	0	0
25 to less than 50	0.29	0.33	0.38	0.42	0.46	0.50
50 to less than 75	0.58	0.67	0.75	0.83	0.92	1.00
75 to 100	0.88	1.00	1.13	1.25	1.38	1.50



Perimeter with > 30' yard = 911'  
Total Perimeter = 1,018'  
911/1,018 = 90%  
Smallest Yard = 53' 1"

90% Building Perimeter  
Yard Dimension = 53' 1"  
Frontage Increase = 138%

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## Table 508.4 Occupancy Separation

TABLE 508.4  
REQUIRED SEPARATION OF OCCUPANCIES (HOURS)\*

OCCUPANCY	A, E		I-1, I-3, I-4		I-2		R*		F-2, S-2*, U		B*, F-1, M, S-1		H-1		H-2		H-3, H-4		H-5	
	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS
A, E	N	N	1	2	2	NP	1	2	N	1	1	2	NP	NP	3	4	2	3	2	NP
I-1, I-3, I-4	1	2	N	N	2	NP	1	NP	1	2	1	2	NP	NP	3	NP	2	NP	2	NP
I-2	2	NP	2	NP	N	N	2	NP	2	NP	2	NP	NP	NP	3	NP	2	NP	2	NP
R*	1	2	1	NP	2	NP	N	N	1*	2*	1	2	NP	NP	3	NP	2	NP	2	NP
F-2, S-2*, U	N	1	1	2	2	NP	1*	2*	N	N	1	2	NP	NP	3	4	2	3	2	NP
B*, F-1, M, S-1	1	2	1	2	2	NP	1	2	1	2	N	N	NP	NP	2	3	1	2	1	NP
H-1	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP	N	NP	NP	NP	NP	NP	NP	NP	NP
H-2	3	4	3	NP	3	NP	3	NP	3	4	2	3	NP	NP	N	NP	1	NP	1	NP
H-3, H-4	2	3	2	NP	2	NP	2	NP	2	3	1	2	NP	NP	1	NP	1*	NP	1	NP
H-5	2	NP	2	NP	2	NP	2	NP	2	NP	1	NP	NP	NP	1	NP	1	NP	N	NP

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### 508.4.4.1 Separation Construction (Separated occupancies)

- New Language:
- Mass timber elements serving as fire barriers or horizontal assemblies to separate occupancies in Type IV-B or IV-C construction shall be separated from the interior of the building with an approved thermal barrier consisting of gypsum board that is not less than 1/2 inch in thickness or a material that is tested in accordance with and meets the acceptance criteria of both the Temperature Transmission Fire Test and the Integrity Fire Test of NFPA 275.



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### 508.5 Live/work units

- A live/work unit shall comply with Sections 508.5 through 508.5.11.

Moved from Section 419



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### 509.4.1.1 (Incidental Uses) Type IV-B and IV-C construction



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- Where Table 509.1 specifies a fire-resistance-rated separation, mass timber elements serving as fire barriers or horizontal assemblies in Type IV-B or IV-C construction shall be separated from the interior of the incidental use with an approved thermal barrier consisting of gypsum board that is not less than 1/2 inch in thickness or a material that is tested in accordance with and meets the acceptance criteria of both the Temperature Transmission Fire Test and the Integrity Fire Test of NFPA 275.

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### Table 509 Incidental uses

[F] TABLE 509 INCIDENTAL USES	
ROOM OR AREA	SEPARATION AND/OR PROTECTION
Furnace room where any piece of equipment is over 400,000 Btu per hour input	1 hour or provide automatic sprinkler system
Rooms with boilers where the largest piece of equipment is over 15 psi and 10 horsepower	1 hour or provide automatic sprinkler system
Refrigerant machinery room	1 hour or provide automatic sprinkler system
Hydrogen fuel gas rooms, not classified as Group H	1 hour in Group B, F, M, S and U occupancies; 2 hours in Group A, E, L and R occupancies.
Incinerator rooms	2 hours and provide automatic sprinkler system
Paint shops, not classified as Group H, located in occupancies other than Group F	2 hours; or 1 hour and provide automatic sprinkler system
In Group E occupancies, laboratories and vocational shops not classified as Group H	1 hour or provide automatic sprinkler system
In Group I-2 occupancies, laboratories not classified as Group H	1 hour and provide automatic sprinkler system
In ambulatory care facilities, laboratories not classified as Group H	1 hour or provide automatic sprinkler system
Laundry rooms over 100 square feet	1 hour or provide automatic sprinkler system
In Group I-2, laundry rooms over 100 square feet	1 hour
Group I-3 cells and Group I-2 patient rooms equipped with padded surfaces	1 hour
In Group I-2, physical plant maintenance shops	1 hour
In ambulatory care facilities or Group I-2 occupancies, waste and linen collection rooms with containers that have an aggregate volume of 10 cubic feet or greater	1 hour
In other than ambulatory care facilities and Group I-2 occupancies, waste and linen collection rooms over 100 square feet	1 hour or provide automatic sprinkler system
In ambulatory care facilities or Group I-2 occupancies, storage rooms greater than 100 square feet	1 hour
<del>Minimum storage capacity systems having an energy capacity greater than the threshold quantity specified in Table 1206.2 of the International Fire Code.</del>	<del>1 hour in Group B, F, M, S and U occupancies; 2 hours in Group A, E, L and R occupancies.</del>
Electrical installations and transformers	See Sections 110.26 through 110.34 and Sections 450.8 through 450.18 of NFPA 70 for protection and separation requirements.

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## 510.2 Horizontal building separation allowance

- New Language:
- 4. Interior exit stairways located within the Type IA building are permitted to be of combustible materials where the following requirements are met:
  - 4.1. The building above the Type IA building is of Type III, IV, or V construction.
  - 4.2. The stairway located in the Type IA building is enclosed by 3-hour fire-resistance-rated construction with opening protectives in accordance with Section 716.



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## Table 601 Building Elements

TABLE 601  
FIRE-RESISTANCE RATING REQUIREMENTS FOR BUILDING ELEMENTS (HOURS)

BUILDING ELEMENT	TYPE I		TYPE II		TYPE III		TYPE IV			TYPE V			
	A	B	A	B	A	B	A	B	C	HT	A	B	
Primary structural frame <sup>1</sup> (see Section 202)	3 <sup>h</sup>	2 <sup>h</sup> / <sub>2</sub>	1 <sup>h</sup>	0 <sup>h</sup>	1 <sup>h</sup>	0	3 <sup>h</sup>	2 <sup>h</sup>	2 <sup>h</sup>		HT	1 <sup>h</sup>	0
Bearing walls													
Exterior <sup>2,3</sup>	3	2	1	0	2	2	3	2	2		2	1	0
Interior	3 <sup>h</sup>	2 <sup>h</sup>	1	0	1	0	3	2	2		1/HT <sup>4</sup>	1	0
Nonbearing walls and partitions	See Table 705.5												
Exterior													
Nonbearing walls and partitions	See Section 2304.11.2												
Interior <sup>4</sup>	0	0	0	0	0	0	0	0	0			0	0
Floor construction and associated secondary structural members (see Section 202)	2	2	1	0	1	0	2	2	2		HT	1	0
Roof construction and associated secondary structural members (see Section 202)	1 1/2 <sup>h</sup>	1 <sup>h</sup>	1 <sup>h</sup>	0 <sup>h</sup>	1 <sup>h</sup>	0	1 1/2 <sup>h</sup>	1	1		HT	1 <sup>h</sup>	0

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## 602.4 Type IV

- Type IV construction is that type of construction in which the building elements are mass timber or noncombustible materials and have fire-resistance ratings in accordance with Table 601.
- Mass timber elements shall meet the fire-resistance-rating requirements of this section based on either the fire-resistance rating of the noncombustible protection, the mass timber, or a combination of both and shall be determined in accordance with Section 703.2



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## 602.4 Type IV

- The minimum dimensions and permitted materials for building elements shall comply with the provisions of this section and Section 2304.11.
- Mass timber elements of Types IV-A, IV-B and IV-C construction shall be protected with noncombustible protection applied directly to the mass timber in accordance with Sections 602.4.1 through 602.4.3.
- The time assigned to the noncombustible protection shall be determined in accordance with Section 703.6 and comply with Section 722.7.



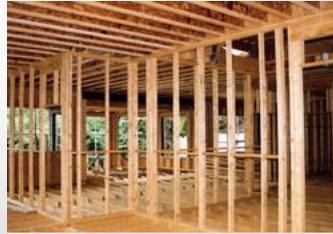
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## 603.1 Allowable materials

- 1. Fire-retardant-treated wood shall be permitted in:
  - 1.1. Nonbearing partitions where the required fire-resistance rating is 2 hours or less except in shaft enclosures within Group I-2 occupancies and ambulatory care facilities.



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## 603.1 Allowable materials

- 1. Fire-retardant-treated wood shall be permitted in:
  - 1.3. Roof construction, including girders, trusses, framing and decking.
  - Exceptions:
    - 2. Group I-2, roof construction containing fire-retardant-treated wood shall be covered by not less than a Class A roof covering or roof assembly, and the roof assembly shall have a fire-resistance rating where required by the construction type.



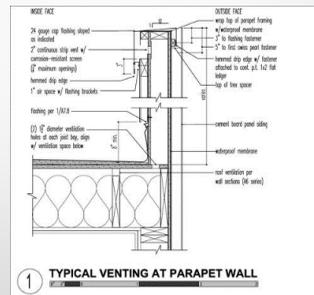
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## 603.1 Allowable materials

- 27. Wood nailers for parapet flashing and roof cants.



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## 704.6.1 Secondary attachments to structural members

- Where primary and secondary structural steel members require fire protection, secondary steel attachments to those structural members shall be protected with the same fire-resistive material and thickness as required for the structural member.

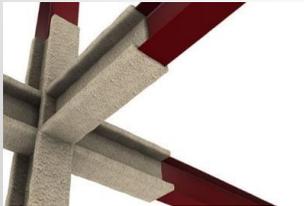


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### 704.6.1 Secondary attachments to structural members



- The protection shall extend away from the structural member a distance of not less than 12 inches or shall be applied to the entire length where the attachment is less than 12 inches long.
- Where an attachment is hollow and the ends are open, the fire-resistive material and thickness shall be applied to both exterior and interior of the hollow steel attachment.

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### 705.5 Exterior Wall Fire-resistance ratings

Exterior walls shall be fire-resistance rated in accordance with Table 601, based on the type of construction, and Table 705.5, based on the fire separation distance.

Moved from Section 602

TABLE 705.5  
FIRE-RESISTANCE RATING REQUIREMENTS FOR EXTERIOR WALLS BASED ON FIRE SEPARATION DISTANCE<sup>a, b</sup>

FIRE SEPARATION DISTANCE = X (feet)	TYPE OF CONSTRUCTION	OCCUPANCY GROUP H <sup>c</sup>	OCCUPANCY GROUP F-1, M, S-1 <sup>d</sup>	OCCUPANCY GROUP A, B, E, F-2, I, R, S-2, U <sup>e</sup>
X < 5 <sup>f</sup>	All	3	2	1
	IA, IVA	3	2	1
	Others	2	1	1
5 ≤ X < 10	IA, IB, IVA, IVB	2	1	1 <sup>g</sup>
	IIB, VB	1	0	0
	Others	1	1	1 <sup>g</sup>
X ≥ 30	All	0	0	0

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### 707.4 Fire Barrier Exterior walls

- Where exterior walls serve as a part of a required fire-resistance-rated shaft, or separation or enclosure for a stairway, ramp or exit passageway, such walls shall comply with the requirements of Section 705 for exterior walls and the fire-resistance-rated enclosure or separation requirements shall not apply.



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### 707.4 Fire Barrier Exterior walls

- New Exception:
- 2. Exterior walls required to be fire-resistance rated in accordance with Section 1207 of the International Fire Code for enclosure of energy storage systems.



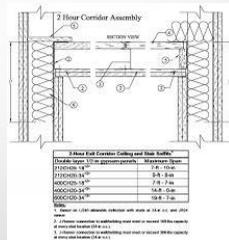
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## 707.5 Fire Barrier Continuity

- New Exception:
- 3. An exit passageway enclosure required by Section 1024.3 that does not extend to the underside of the roof sheathing, slab or deck above shall be enclosed at the top with construction of the same fire-resistance rating as required for the exit passageway.



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## 708.1 FIRE PARTITIONS

- The following wall assemblies shall comply with this section:
  - 6. Walls separating ambulatory care facilities from adjacent spaces, corridors or tenant spaces as required by Section 4.22.2.
  - 7. Walls separating dwelling and sleeping units in Groups R-1 and R-2 in accordance with Sections 907.2.8.1 and 907.2.9.1.
  - 8. Vestibules in accordance with Section 1028.2.



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## 708.4.1 Supporting construction



- Exception: In buildings of Types IIB, IIIB and VB construction, the supporting construction requirement shall not apply to fire partitions separating tenant spaces in covered and open mall buildings, fire partitions separating dwelling units, fire partitions separating sleeping units, fire partitions serving as corridor walls, fire partitions separating ambulatory care facilities from adjacent spaces or corridors, fire partitions separating dwelling and sleeping units from Group R-1 and R-2 occupancies and fire partitions separating vestibules from the level of exit discharge.

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## 709.4.1 Smoke-barrier assemblies separating smoke compartments

- Smoke-barrier wall assemblies used to separate smoke compartments shall form an effective membrane enclosure that is continuous from an outside wall or smoke barrier wall to an outside wall or another smoke barrier wall and to the horizontal assemblies.



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## 202 Definitions

- SMOKE COMPARTMENT.
- A space within a building separated from other interior areas of the building by smoke barriers, including interior walls and horizontal assemblies.
- Typically found in I-2 occupancies



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## 710.5.3 Pass-through openings in Group I-2, Condition 2

- Where pass-through openings are provided in smoke partitions in Group I-2, Condition 2 occupancies, such openings shall comply with the following:

1. The smoke compartment in which the pass-through openings occur does not contain a patient care suite or sleeping room.
2. Pass-through openings are installed in a wall, door or vision panel that is not required to have a fire-resistance rating.
3. The top of the pass-through opening is located a maximum of 48 inches above the floor.
4. The aggregate area of all such pass-through openings within a single room shall not exceed 80 square inches



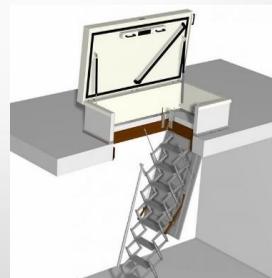
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## 713.12 Shaft Enclosure at top

- The top of shaft enclosures shall comply with one of the following:
- 1. Extend to the underside of the roof sheathing, deck or slab of the building, and the roof assembly shall comply with the requirements for the type of construction as specified in Table 601.



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## 713.12 Shaft Enclosure at top

2. Terminate below the roof assembly and be enclosed at the top with construction of the same fire-resistance rating as the topmost floor penetrated by the shaft, but not less than the fire-resistance rating required for the shaft enclosure.
3. Extend past the roof assembly and comply with the requirements of Section 1511.



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## 713.12.1 Penthouse mechanical rooms



- A fire/smoke damper shall not be required at the penetration of the rooftop structure where shaft enclosures extend up through the roof assembly into a rooftop structure conforming to Section 1511.
- Ductwork in the shaft shall be connected directly to HVAC equipment.

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## 715 JOINTS AND VOIDS

- The provisions of this section shall govern the materials and methods of construction used to protect joints and voids in or between horizontal and vertical assemblies.



Section reformatted and clarified

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TABLE 716.1(2)  
OPENING FIRE PROTECTION ASSEMBLIES, RATINGS AND MARKINGS

TYPE OF ASSEMBLY	REQUIRED WALL ASSEMBLY RATING (hours)	MINIMUM FIRE DOOR AND FIRE SHUTTER ASSEMBLY RATING (hours)	DOOR VISION PANEL SIZE*	FIRE-RATED GLAZING MARKING DOOR VISION PANEL*	MINIMUM SIDELIGHT/TRANSOM ASSEMBLY RATING (hours)		FIRE-RATED GLAZING MARKING SIDE-LIGHT/TRANSOM PANEL		
					Fire protection	Fire resistance	Fire protection	Fire resistance	
Fire walls and fire barriers having a required fire-resistance rating greater than 1 hour	4	3	See Note a	D-H-W-240	Not Permitted	4	Not Permitted	W-240	
	3	3 <sup>1</sup> / <sub>2</sub>	See Note a	D-H-W-180	Not Permitted	3	Not Permitted	W-180	
	2	1 <sup>1</sup> / <sub>2</sub>	100 sq. in.	≤100 sq. in. = D-H-90 >100 sq. in. = D-H-W-90	Not Permitted	2	Not Permitted	W-120	
	1 <sup>1</sup> / <sub>2</sub>	1 <sup>1</sup> / <sub>2</sub>	100 sq. in.	≤100 sq. in. = D-H-90 >100 sq. in. = D-H-W-90	Not Permitted	1 <sup>1</sup> / <sub>2</sub>	Not Permitted	W-90	
Double fire walls constructed in accordance with NFPA 221	Single-wall assembly rating (hours) <sup>1</sup>	Each wall of the double-wall assembly (hours) <sup>2</sup>			—				
	4	3	3	See Note a	D-H-W-180	Not Permitted	3	Not Permitted	W-180
	3	2	1 <sup>1</sup> / <sub>2</sub>	100 sq. in.	≤100 sq. in. = D-H-90 >100 sq. in. = D-H-W-90	Not Permitted	2	Not Permitted	W-120
	2	1	1	100 sq. in.	≤100 sq. in. = D-H-60 >100 sq. in. = D-H-W-60	Not Permitted	1	Not Permitted	W-60

\* See Section 716.1(1) for details.

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## 202 Definitions

- TERMINATED STOPS.
- Factory feature of a door frame where the stops of the door frame are terminated not more than 6 inches from the bottom of the door frame.
- Terminated stops are also known as “hospital stops” or “sanitary stops.”



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### 716.2.2.1.1 Smoke and draft control

- Terminated stops shall be prohibited on doors required by Section 405.4.3 (Underground building smoke barriers) to comply with Section 716.2.2.1 and prohibited on doors required by Item 3 of Section 3006.3 (Elevator Lobbies), or Section 3007.6.3 (Fire Service Access Elevator Lobbies) or 3008.6.3 (Occupant Evacuation Elevator Lobbies) to comply with this section.



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### 716.2.5.4.1 Energy storage system separation

- Fire-protection-rated glazing shall not be permitted in fire door frames with transom lights and side-lights in fire barriers required by Section 1207 of the International Fire Code to enclose energy storage systems.



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### 716.3.2.1.1.1 Energy storage system separation



- Fire-protection-rated glazing is not permitted for use in fire window assemblies in fire barriers required by Section 1207 of the International Fire Code to enclose energy storage systems.

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### 716.4 Fire protective curtain assembly

- Approved fire protective curtain assemblies shall be constructed of any materials or assembly of component materials tested without hose stream in accordance with UL 10D, and shall comply with the Sections 716.4.1 through 716.4.3



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### 716.4.1 Label



- Fire protective curtain assemblies used as opening protectives in fire-rated walls and smoke partitions shall be labeled in accordance with Section 716.2.9.

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### 716.4.2 Smoke and draft control

- Fire protective curtain assemblies used to protect openings where smoke and draft control assemblies are required shall comply with Section 716.2.1.4.



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### 716.4.3 Installation

- Fire protective curtain assemblies shall be installed in accordance with NFPA 80.



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### 717.2.3 Static dampers



- Fire dampers and ceiling radiation dampers that are listed for use in static systems shall only be installed in heating, ventilation and air-conditioning systems that are automatically shut down in the event of a fire.

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## 717.4.1 Damper Access

- Fire and smoke dampers shall be provided with an approved means of access that is large enough to permit inspection and maintenance of the damper and its operating parts.
- Dampers equipped with fusible links, internal operators, or both shall be provided with an access door that is not less than 12 inches square or provided with a removable duct section.



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## 717.4.1.1 Access openings

- The access shall not affect the integrity of fire-resistance-rated assemblies.
- The access openings shall not reduce the fire-resistance rating of the assembly.
- Access doors in ducts shall be tight fitting and suitable for the required duct construction.



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## 717.4.1.2 Restricted access

- Where space constraints or physical barriers restrict access to a damper for periodic inspection and testing, the damper shall be a single- or multi-blade type damper and shall comply with the remote inspection requirements of NFPA 80 or NFPA 105.



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## 717.4.2 Identification

- Access points shall be permanently identified on the exterior by a label having letters not less than 1/2 inch in height reading:
  - "FIRE/SMOKE DAMPER"
  - "SMOKE DAMPER" or
  - "FIRE DAMPER"



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## 717.5.2 Fire barriers

- Exceptions: Fire dampers are not required at penetrations of fire barriers where any of the following apply:
- Exception 3 – added language:
  - Nonmetal flexible air connectors shall be permitted in the following locations:
    - 3.1. At the duct connection to the air handling unit or equipment located within the mechanical room in accordance with Section 603.9 of the International Mechanical Code.
    - 3.2. From an overhead metal duct to a ceiling diffuser within the same room in accordance with Section 603.6.2 of the International Mechanical Code.



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## 717.6.2.1.1 Dynamic systems

- Only ceiling radiation dampers labeled for use in dynamic systems shall be installed in heating, ventilation and air-conditioning systems designed to operate with fans on during a fire.



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## 717.6.2.1.2 Static systems

- Static ceiling radiation dampers shall be provided with systems that are not designed to operate during a fire.
  - Exceptions



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## 717.6.2.1.2 Static systems - Exceptions

1. Where a static ceiling radiation damper is installed at the opening of a duct, a smoke detector shall be installed inside the duct or outside the duct with sampling tubes protruding into the duct.
- The detector or tubes in the duct shall be within 5 feet of the damper.
  - Air outlets and inlets shall not be located between the detector or tubes and the damper.
  - The detector shall be listed for the air velocity, temperature and humidity anticipated at the point where it is installed.
  - Other than in mechanical smoke control systems, dampers shall be closed upon fan shutdown where local smoke detectors require a minimum velocity to operate.



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## 717.6.2.1.2 Static systems - Exceptions

- 2. Where a static ceiling radiation damper is installed in a ceiling, the ceiling radiation damper shall be permitted to be controlled by a smoke detection system installed in the same room or area as the ceiling radiation damper.



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## 717.6.2.1.2 Static systems - Exceptions

- 3. A static ceiling radiation damper shall be permitted to be installed in a room where an occupant sensor is provided within the room that will shut down the system.



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## Fire-resistance rating for mass timber 722.7

- Many new requirements in 722 for calculated fire resistance for Mass Timber.
- Very prescriptive—read carefully!

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## 722.7 Calculated Fire-resistance rating for mass timber



- The required fire resistance of mass timber elements in Section 602.4 shall be determined in accordance with Section 703.2.
- The fire-resistance rating of building elements shall be as required in Tables 601 and 705.5 and as specified elsewhere in this code.
- The fire-resistance rating of the mass timber elements shall consist of the fire resistance of the unprotected element added to the protection time of the noncombustible protection.

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## 806.9 Combustible lockers

- Where lockers constructed of combustible materials are used, the lockers shall be considered to be interior finish and shall comply with Section 803.
- Exception: Lockers constructed entirely of wood and noncombustible materials shall be permitted to be used wherever interior finish materials are required to meet a Class C classification in accordance with Section 803.1.2.



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## 903.2.4.2 Group F-1 distilled spirits Fire Sprinklers

- An automatic sprinkler system shall be provided throughout a Group F-1 fire area used for the manufacture of distilled spirits.



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## 903.2.9.3 Group S-1 Distilled spirits or wine

- An automatic sprinkler system shall be provided throughout a Group S-1 fire area used for the bulk storage of distilled spirits or wine.



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## 903.2.4.3 Group F-1 upholstered furniture or mattresses

- An automatic sprinkler system shall be provided throughout a Group F-1 fire area that exceeds 2,500 square feet used for the **manufacture** of upholstered furniture or mattresses.



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### 903.2.7.2 Group M upholstered furniture or mattresses



- An automatic sprinkler system shall be provided throughout a Group M fire area where the area used for the **display and sale** of upholstered furniture or mattresses exceeds **5,000** square feet.

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### 903.2.9.4 Group S-1 upholstered furniture and mattresses



- An automatic sprinkler system shall be provided throughout a Group S-1 fire area where the area used for the **storage of upholstered furniture or mattresses exceeds 2,500** square feet.
  - New Exception: Self-service storage facilities not greater than one story above grade plane where all storage spaces can be accessed directly from the exterior.

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### 903.2.10 Group S-2 parking garages

- An automatic sprinkler system shall be provided throughout buildings classified as parking garages where any of the following conditions exists:
  - 3. Where the fire area of the open parking garage in accordance with Section 406.5 exceeds 48,000 square feet



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### 202 Definitions



- MECHANICAL-ACCESS ENCLOSED PARKING GARAGE.**
- An enclosed parking garage that employs parking machines, lifts, elevators or other mechanical devices for vehicle moving from and to street level and in which public occupancy in the garage is prohibited in all areas except the vehicle access bay.

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### 903.2.10.2 Mechanical-access enclosed parking garages

- An approved automatic sprinkler system shall be provided throughout buildings used for the storage of motor vehicles in a mechanical-access enclosed parking garage.
- The portion of the building that contains the mechanical-access enclosed parking garage shall be protected with a specially engineered automatic sprinkler system.



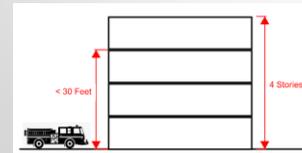
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### 903.3.1.2 NFPA 13R sprinkler systems

- Automatic sprinkler systems in Group R occupancies shall be permitted to be installed throughout in accordance with NFPA 13R where the Group R occupancy meets all of the following conditions:
  1. Four stories or fewer above grade plane.
  2. The floor level of the highest story is 30 feet or less above the lowest level of fire department vehicle access.
  3. The floor level of the lowest story is 30 feet or less below the lowest level of fire department vehicle access.



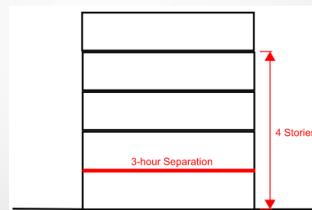
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### 903.3.1.2 NFPA 13R sprinkler systems

- The number of stories of Group R occupancies constructed in accordance with Sections 510.2 and 510.4 shall be measured from grade plane.



NFPA 13 Fire Sprinklers Required

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### 903.3.1.2.2 Corridors and balconies in the means of egress (NFPA 13R)

- Sprinkler protection shall be provided in corridors and for balconies in the means of egress where any of the following conditions apply:
  1. Corridors with combustible floor or walls.
  2. Corridors with an interior change of direction exceeding 45 degrees



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### 903.3.1.2.2 Corridors and balconies in the means of egress



- 3. Corridors that are less than 50 percent open to the outside atmosphere at the ends.
- 4. Open-ended corridors and associated exterior stairways and ramps as specified in Section 1027.6, Exception 3.
- 5. Egress balconies not complying with Sections 1021.2 and 1021.3.

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### 905.3.1 Height

- Class III standpipe systems shall be installed throughout buildings where any of the following conditions exist:
  - Revised Exception
    - 3. Class I standpipes are allowed in parking garages.
- Exception 4 removed – refer to Section 905.8 regarding freezing



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### 906 Portable Fire Extinguishers

- Portable fire extinguishers shall be installed in the following locations:
  - Group A,B,E,F,H,I, M,R-1, R-2, R-4 and S occupancies
  - New exception 3 for storage areas of Group S occupancies—5 criteria that must all be met



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### 907.2.10 Group S Fire Alarms



- A manual fire alarm system that activates the occupant notification system in accordance with Section 907.5 shall be installed in Group S public-and self-storage occupancies three stories or greater in height for interior corridors and interior common areas.
- Visible notification appliances are not required within storage units.
  - Exception...

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## 907.2.10 Group S Fire Alarms



- Exception:
- Manual fire alarm boxes are not required where the building is equipped throughout with an automatic sprinkler system installed in accordance with Section 903.3.1.1, and the occupant notification appliances will activate throughout the notification zones upon sprinkler water flow.

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## 907.5.2.1.3.1 R-1/R-2 Fire alarm system signal

- In sleeping rooms of Group R-1 and R-2 occupancies, the audible alarm activated by a fire alarm system shall be a 520-Hz low-frequency signal complying with NFPA 72.



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## 907.5.2.1.3.2 Smoke alarm signal in sleeping rooms



- In sleeping rooms of Group R-1 and R-2 occupancies that are required by Section 907.2.8 (R-1) or 907.2.9 (R-2) to have a fire alarm system, the audible alarm signal activated by single- or multiple-station smoke alarms in the dwelling unit or sleeping unit shall be a 520-Hz signal complying with NFPA 72.
- Where a sleeping room smoke alarm is unable to produce a 520-Hz signal, the 520-Hz alarm signal shall be provided by a listed notification appliance or a smoke detector with an integral 520-Hz sounder.

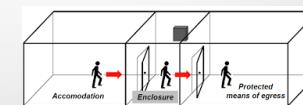
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## 909.20.6 Pressurized stair and vestibule alternative

- The provisions of Sections 909.20.6.1 through 909.20.6.3 shall apply to smokeproof enclosures using a pressurized stair and pressurized entrance vestibule.



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## 911 FIRE COMMAND CENTER

- Where required by other sections of this code, in buildings classified as high-rise buildings by this code and in all F-1 and S-1 occupancies with a building foot-print of over 500,000 square feet, a fire command center for fire department operations shall be provided and shall comply with Sections 911.1.1 through 911.1.7.



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## 911.1.3 Fire command Size

- New Language:
- Where a fire command is required for Group F-1 and S-1 occupancies with a building foot-print greater than 500,000 square feet in area, the fire command center shall have a minimum size of 96 square feet with a minimum dimension of 8 feet where approved by the fire code official.



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End of Day One  
**Questions?**

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## 1006.2.1 Egress based on occupant load and common path of egress travel distance

- New Exception
- 3. Unoccupied mechanical rooms and penthouses are not required to comply with the common path of egress travel distance measurement.



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## 1006.3.2 Path of egress travel



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- The path of egress travel to an exit shall not pass through more than one adjacent story.
- 2 New Exceptions:
  - 3. Exit access stairways and ramps within an atrium complying with Section 404.
  - 7. Exterior exit access stairways and ramps between occupied roofs.

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## 1006.3.4 Single exits



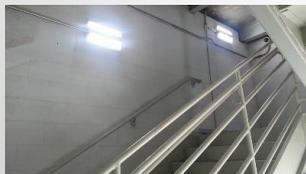
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- A single exit or access to a single exit shall be permitted from any story or occupied roof where one of the following conditions exists:
  1. The occupant load, number of dwelling units and exit access travel distance do not exceed the values in Table 1006.3.4(1) or 1006.3.4(2).

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## 1008.2.1 Illumination level under normal power



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- The means of egress illumination level shall be not less than 1 footcandle at the walking surface.
- Along exit access stairways, exit stairways and at their required landings, the illumination level shall not be less than 10 footcandles at the walking surface when the stairway is in use.

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## 1009.2.1 Accessible Means of Egress Elevators required



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- In buildings where a required accessible floor or occupied roof is four or more stories above or below a level of exit discharge, not less than one required accessible means of egress shall be an elevator complying with Section 1009.4.

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## 1009.6.2 Stairway or elevator access



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- Every required area of refuge shall have direct access to a stairway complying with Sections 1009.3 and 1023 or an elevator complying with Section 1009.4.
- Exception: An interior area of refuge at the level of exit discharge that provides direct access to an exterior exit door.

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## 1009.6.3 Area of Refuge Size



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- Each area of refuge shall be sized to accommodate one wheelchair space of 30 inches by 52 inches for each 200 occupants or portion thereof, based on the occupant load of the area of refuge and areas served by the area of refuge.

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## 1010.1.1 Size of doors

- Deleted Language:  
The maximum width of a swinging door leaf shall be 48 inches nominal.
- New Exception:  
11. Doors serving nonaccessible single-user shower or sauna compartments, toilet stalls or dressing, fitting or changing rooms shall have a minimum clear opening width of 20 inches



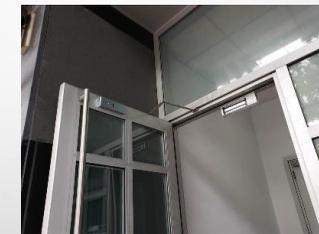
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## 1010.1.1.1 Projections into Door clear opening

- New Exception:  
Door closers, overhead door stops, power door operators, and electromagnetic door locks shall be permitted to be 78 inches minimum above the floor.



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### 1010.1.2 Egress door types



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- Egress doors shall be of the side-hinged swinging door, pivoted door, or balanced door types.

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### 1010.1.3 Forces to unlatch and open doors

- The forces to unlatch doors shall comply with the following:
  - Where door hardware operates by push or pull, the operational force to unlatch the door shall not exceed 15 pounds
  - Where door hardware operates by rotation, the operational force to unlatch the door shall not exceed 28 inch-pounds



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### 1010.1.3 Forces to unlatch and open doors



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- The force to open doors shall comply with the following:
  - For interior swinging egress doors that are manually operated, other than doors required to be fire rated, the force for pushing or pulling open the door shall not exceed 5 pounds.
  - For other swinging doors, sliding doors or folding doors, and doors required to be fire rated, the door shall require not more than a 30-pound force to be set in motion and shall move to a full-open position when subjected to not more than a 15-pound force.

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### 1010.2.4 Locks and latches

- Locks and latches shall be permitted to prevent operation of doors where any of the following exist:
  - In Group I-1, Condition 2 and Group I-2 occupancies where the clinical needs of persons receiving care require containment or where persons receiving care pose a security threat, provided that all clinical staff can readily unlock doors at all times, and all such locks are keyed to keys carried by all clinical staff at all times or all clinical staff have the codes or other means necessary to operate the locks at all times.



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### 1010.2.4 Locks and latches



- 8. Other than egress courts, where occupants must egress from an exterior space through the building for means of egress, exit access doors shall be permitted to be equipped with an approved locking device where installed and operated in accordance with all of the following:

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### 1010.2.4 Locks and latches



- 8.1. The maximum occupant load shall be posted where required by Section 1004.9. Such signage shall be permanently affixed inside the building and shall be posted in a conspicuous space near all the exit access doorways.
- 8.2. A weatherproof telephone or two-way communication system installed in accordance with Sections 1009.8.1 and 1009.8.2 shall be located adjacent to not less than one required exit access door on the exterior side.

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### 1010.2.4 Locks and latches



- 8.3. The egress door locking device is readily distinguishable as locked and shall be a key-operated locking device.
- 8.4. A clear window or glazed door opening, not less than 5 square feet in area, shall be provided at each exit access door to determine if there are occupants using the outdoor area.

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### 1010.2.4 Locks and latches



- 8.5. A readily visible, durable sign shall be posted on the interior side on or adjacent to each locked required exit access door serving the exterior area stating, "THIS DOOR TO REMAIN UNLOCKED WHEN THE OUTDOOR AREA IS OCCUPIED." The letters on the sign shall be not less than 1 inch high on a contrasting background.

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### 1010.2.4 Locks and latches

**MAXIMUM  
OCCUPANCY  
282 PERSONS**

- 8.6. The occupant load of the occupied exterior area shall not exceed 300 occupants in accordance with Section 1004.

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### 1010.2.4 Locks and latches



- 9. Locking devices are permitted on doors to balconies, decks or other exterior spaces serving individual dwelling or sleeping units.

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### 1010.2.4 Locks and latches



- 10. Locking devices are permitted on doors to balconies, decks or other exterior spaces of 250 square feet or less serving a private office space.

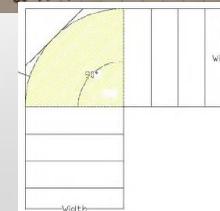
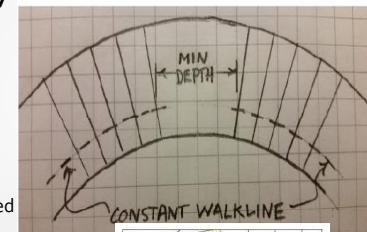
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### 1011.6 Stairway landings

- New Exceptions:
- 2. Where curved stairways of constant radius have intermediate landings, the landing depth shall be measured horizontally between the intersection of the walkline of the lower flight at the landing nosing and the intersection of the walkline of the upper flight at the nosing of the lowest tread of the upper flight.



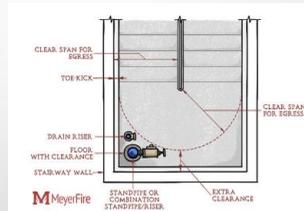
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## 1011.6 Stairway landings

- 3. Where a landing turns 90 degrees or more, the minimum landing depth in accordance with this section shall not be required where the landing provided is not less than that described by an arc with a radius equal to the width of the flight served.



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## 1016.2 Egress through intervening spaces



- 1. Exit access through an enclosed elevator lobby is permitted. Where access to two or more exits or exit access doorways is required in Section 1006.2.1, access to not less than one of the required exits shall be provided without travel through the enclosed elevator lobbies required by Section 3006. ...

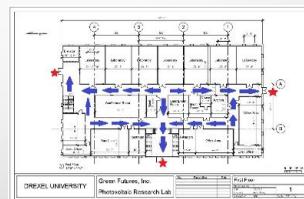
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## 1017.3 Measurement

- Exit access travel distance shall be measured from the most remote point of each room, area or space along the natural and unobstructed path of horizontal and vertical egress travel to the entrance to an exit.
- Where more than one exit is required, exit access travel distance shall be measured to the nearest exit.



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## 1019.3 Occupancies other than Groups I-2 and I-3 Exit Access Stairways



- In other than Group I-2 and I-3 occupancies, floor openings containing exit access stairways or ramps shall be enclosed with a shaft enclosure constructed in accordance with Section 713.
- Exceptions:
  1. Exit access stairways and ramps that serve or atmospherically communicate between only two adjacent stories. Such interconnected stories shall not be open to other stories.

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### 1019.3 Occupancies other than Groups I-2 and I-3 Exit Access Stairways



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- New Exception:
- 9. Exterior exit access stairways or ramps between occupied roofs.

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### 1020.5 Corridor Dead ends



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- New Exception:
- 4. In Group I-2, Condition 2 occupancies, the length of dead-end corridors that do not serve patient rooms or patient treatment spaces shall not exceed 30 feet.

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### 1023.5 Penetrations



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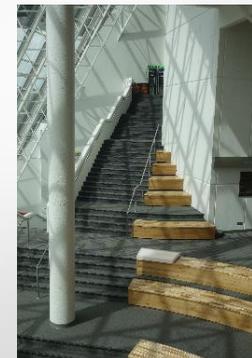
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- Penetrations into or through interior exit stairways and ramps are prohibited except for the following:
- 7. Structural elements supporting the interior exit stairway or ramp or enclosure, such as beams or joists.

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### 1030.16 Handrails

- Ramped aisles having a slope exceeding one unit vertical in 15 units horizontal and stepped aisles shall be provided with handrails in compliance with Section 1014, located either at one or both sides of the aisle or within the aisle width.
- Where stepped aisles have seating on one side and the aisle width is 74 inches or greater, two handrails are required.
- Where two handrails are required, one of the handrails shall be within 30 inches horizontally of the stepped aisle.



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## 1030.16.1 Discontinuous mid-aisle handrails

- Where there is seating on both sides of the aisle, the mid-aisle handrails shall be discontinuous.
- Where a stepped aisle is required to have two handrails, the mid-aisle handrails shall be discontinuous.



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## 1031.4 Emergency escape and rescue doors



- Where a door is provided as the required emergency escape and rescue opening, it shall be a swinging door or a sliding door.
- Consistent with IRC Requirements

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## 1102 Accessibility COMPLIANCE/Design

- Buildings and facilities shall be designed and constructed to be accessible in accordance with this code and ICC A117.1.



New 2017 Edition

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## 1104.4 Multistory buildings and facilities Accessible Route



- Exception 1.
- An accessible route is not required to stories, mezzanines and occupied roofs that have an aggregate area of not more than 3,000 square feet and are located above and below accessible levels. This exception shall not apply to:
  - 1.5. Structures with four or more dwelling units.

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## 1105.1.1 Automatic doors

- In facilities with the occupancies and building occupant loads indicated in Table 1105.1.1, public entrances that are required to be accessible shall have one door be either a full power-operated door or a low-energy power-operated door.
- Where the public entrance includes a vestibule, at least one door into and one door out of the vestibule shall meet the requirements of this section.

**TABLE 1105.1.1  
PUBLIC ENTRANCE WITH POWER-OPERATED DOOR\***

OCCUPANCY	BUILDING OCCUPANT LOAD GREATER THAN
A-1, A-2, A-3, A-4	300
B, M, R-1	500

a. In mixed-use facilities where the total sum of the building occupant load is greater than those listed, the most restrictive building occupant load shall apply.

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## 1107.2 Electrical vehicle charging stations



- Electrical vehicle charging stations shall comply with Sections 1107.2.1 and 1107.2.2.
  - Exception: Electrical vehicle charging stations provided to serve Group R-2, R-3 and R-4 occupancies are not required to comply with this section.

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## 1107.2.1 Number of accessible vehicle spaces

- Not less than 5 percent of vehicle spaces on the site served by electrical vehicle charging systems, but not fewer than one for each type of electric vehicle charging system, shall be accessible.



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## 1107.2.2 Vehicle space size



- Accessible vehicle spaces shall comply with the requirements for a van accessible parking space that is 132 inches minimum in width with an adjoining access aisle that is 60 inches minimum in width.

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## 1108.5.1.1 Accessible units

- In Group I-1, Condition 1, at least 4 percent, but not less than one, of the dwelling units and sleeping units shall be Accessible units. Accessible dwelling units and sleeping units shall be dispersed among the various classes of units.

- Exceptions:

- Water closets shall not be required to comply with ICC A117.1 where such water closets comply with Section 1110.2.2, in not more than 50 percent of the Accessible units.
- Roll-in-type showers shall not be required to comply with ICC A117.1 where roll-in-type showers comply with Section 1110.2.3, in not more than 50 percent of the Accessible units.



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## 1108.5.1.2 Accessible units in Group I-1, Condition 2

- In Group I-1, Condition 2, at least 10 percent, but not less than one, of the dwelling units and sleeping units shall be Accessible units. Accessible dwelling units and sleeping units shall be dispersed among the various classes of units.

- Exceptions:

- Water closets shall not be required to comply with ICC A117.1 where such water closets comply with Section 1110.2.2, in not more than 50 percent of the Accessible units.
- Roll-in-type showers shall not be required to comply with ICC A117.1 where roll-in-type showers comply with Section 1110.2.3, in not more than 50 percent of the Accessible units.



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## 1108.5.2.1 Nursing Homes Accessible units

- At least 50 percent but not less than one of each type of the dwelling units and sleeping units shall be Accessible units.

- Exceptions:

- Water closets shall not be required to comply with ICC A117.1 where such water closets comply with Section 1110.2.2, in not more than 90 percent of the Accessible units.
- Roll-in-type showers shall not be required to comply with ICC A117.1 where roll-in-type showers comply with Section 1110.2.3, in not more than 90 percent of the Accessible units.



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## 1108.5.4 Group I-2 rehabilitation facilities

- In hospitals and rehabilitation facilities of Group I-2 occupancies that specialize in treating conditions that affect mobility, or units within either that specialize in treating conditions that affect mobility, 100 percent of the dwelling units and sleeping units shall be Accessible units.

- Exceptions:

- Water closets shall not be required to comply with ICC A117.1 where such water closets comply with Section 1110.2.2, in not more than 50 percent of Accessible units.
- Roll-in-type showers shall not be required to comply with ICC A117.1 where roll-in-type showers comply with Section 1110.2.3, in not more than 50 percent of Accessible units.



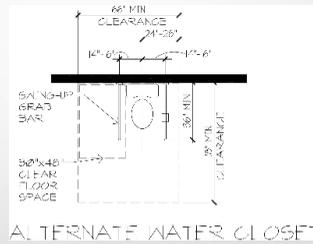
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## 1110.2 Toilet and bathing facilities

- Each toilet room and bathing room shall be accessible. ...
- New Exceptions:
  - 7. Where permitted in Section 1108, in toilet rooms or bathrooms serving Accessible units, water closets designed for assisted toileting shall comply with Section 1110.2.2.
  - 8. Where permitted in Section 1108, in bathrooms serving Accessible units, showers designed for assisted bathing shall comply with Section 1110.2.3.



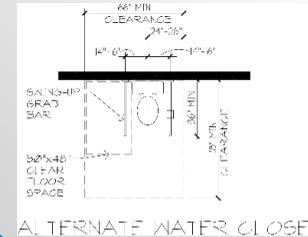
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## 1110.2.2 Water closets designed for assisted toileting

- Water closets designed for assisted toileting shall comply with Sections 1110.2.2.1 through 1110.2.2.6.



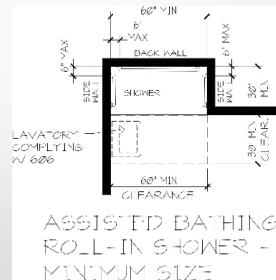
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## 1110.2.3 Standard roll-in-type shower compartment designed for assisted bathing

- Standard roll-in-type shower compartments designed for assisted bathing shall comply with Sections 1110.2.3.1 through 1110.2.3.9.



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## 1110.6 Bottle-filling stations

- Where bottle-filling stations are provided, they shall be accessible.
  - Exception: Bottle-filling stations over drinking fountains for standing persons are not required to be accessible, provided that bottle-filling stations are also located over the drinking fountains for persons using wheelchairs.



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## 1110.13.2 Sales and service counters and windows

- Where counters or windows are provided for sale or distribution of goods or services, at least one of each type of counter and window provided shall be accessible.
- Where such counters or windows are dispersed through-out the building or facility, accessible counters or windows shall also be dispersed.



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## 1110.15 Controls, operating mechanisms and hardware



- Controls, operating mechanisms and hardware intended for operation by the occupant, including switches that control lighting and ventilation and electrical convenience outlets, in accessible spaces, along accessible routes or as parts of accessible elements shall be accessible.
- Exceptions 2-6 deleted
- New Exception:
  - Operable parts exempted in accordance with ICC A117.1 are not required to be accessible.

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## 1207 ENHANCED CLASSROOM ACOUSTICS

- Enhanced classroom acoustics, where required by this section, shall comply with Section 808 of ICC A117.1.
- In Group E occupancies, enhanced classroom acoustics shall be provided in all classrooms with a volume of 20,000 cubic feet or less.
- ICC A117.1 Section 808



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## 202 Definitions

- DWELLING UNIT, EFFICIENCY.
- A dwelling unit where all permanent provisions for living, sleeping, eating and cooking are contained in a single room.



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## 1208.4 Efficiency dwelling units



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- Efficiency dwelling units shall conform to the requirements of the code except as modified herein:
  1. The unit shall have a living room of not less than 190 square feet of floor area.
  2. The unit shall be provided with a separate closet.

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## 1208.4 Efficiency dwelling units



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- 3. For other than Accessible, Type A and Type B dwelling units, the unit shall be provided with a kitchen sink, cooking appliance and refrigerator, each having a clear working space of not less than 30 inches in front. Light and ventilation conforming to this code shall be provided.
- 4. The unit shall be provided with a separate bathroom containing a water closet, lavatory and bathtub or shower.

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## 1210.3 Restroom Privacy

- Public restrooms shall be visually screened from outside entry or exit doorways to ensure user privacy within the restroom.
- This provision shall also apply where mirrors would compromise personal privacy.
- Privacy at water closets and urinals shall be provided in accordance with Sections 1210.3.1 and 1210.3.2.
  - Exception: Visual screening shall not be required for single-occupant toilet rooms with a lockable door.



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## 1404.3 Vapor retarders

- Vapor retarder materials shall be classified in accordance with Table 1404.3(1).
- A vapor retarder shall be provided on the interior side of frame walls in accordance with Tables 1404.3(2) and 1404.3(3), or an approved design using accepted engineering practice for hygrothermal analysis.
- The appropriate climate zone shall be selected in accordance with Chapter 3 of the International Energy Conservation Code.

TABLE 1404.3(1)  
VAPOR RETARDER MATERIALS AND CLASSES

VAPOR RETARDER CLASS	ACCEPTABLE MATERIALS
I	Sheet polyethylene, nonperforated aluminum foil, or other approved materials with a perm rating of less than or equal to 0.1
II	Kraft-faced fiberglass bats or vapor retarder paint or other approved materials, applied in accordance with the manufacturer's instructions for a perm rating greater than 0.1 and less than or equal to 1.0
III	Latex paint, enamel paint, or other approved materials, applied in accordance with the manufacturer's instructions for a perm rating of greater than 1.0 and less than or equal to 10

TABLE 1404.3(2)  
VAPOR RETARDER OPTIONS

CLIMATE ZONE	VAPOR RETARDER CLASS		
	I	II	III
1, 2	Not permitted	Not Permitted	Permitted
3, 4 (except Marine 4)	Not permitted	Permitted	Permitted
Marine 4, 5, 6, 7, 8	Permitted	Permitted	See Table 1404.3(3)

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### 1503.3.1 Fire-resistance-rated parapet walls



- Parapet walls required by Section 705.11 shall be coped or covered with weatherproof materials of a width not less than the thickness of the parapet wall such that the fire-resistance rating of the wall is not decreased.

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### 1503.3.2 Other parapet walls

- Parapet walls meeting one of the exceptions in Section 705.11 shall be coped or covered with weatherproof materials of a width not less than the thickness of the parapet wall.



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### 1705.5.3 Mass timber construction

Special inspections of mass timber elements in Types IV-A, IV-B and IV-C construction shall be in accordance with Table 1705.5.3.

TABLE 1705.5.3  
REQUIRED SPECIAL INSPECTIONS OF MASS TIMBER CONSTRUCTION

TYPE		CONTINUOUS SPECIAL INSPECTION	PERIODIC SPECIAL INSPECTION
1.	Inspection of anchorage and connections of mass timber construction to timber deep foundation systems.	—	X
2.	Inspect erection of mass timber construction.	—	X
3.	Inspection of connections where installation methods are required to meet design loads.		
Threaded fasteners	Verify use of proper installation equipment.	—	X
	Verify use of pre-drilled holes where required.	—	X
	Inspect screws, including diameter, length, head type, spacing, installation angle and depth.	—	X
	Adhesive anchors installed in horizontal or upwardly inclined orientation to resist sustained tension loads.	X	—
	Adhesive anchors not defined in preceding cell.	—	X
	Bolted connections.	—	X
	Concealed connections.	—	X

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### 1705.13.7 Storage racks

- Steel storage racks and steel cantilevered storage racks that are 8 feet in height or greater and assigned to Seismic Design Category D, E or F shall be provided with periodic special inspection as required by Table 1705.13.7.



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## 1705.18 Fire-resistant penetrations and joints



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- In high-rise buildings, in buildings assigned to Risk Category III or IV, or in fire areas containing Group R occupancies with an occupant load greater than 250 (50,000 SF), special inspections for through-penetrations, membrane penetration firestops, fire-resistant joint systems and perimeter fire containment systems that are tested and listed in accordance with Sections 714.4.1.2, 714.5.1.2, 715.3.1 and 715.4 shall be in accordance with Section 1705.18.1 or 1705.18.2.

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## 1705.20 Sealing of mass timber



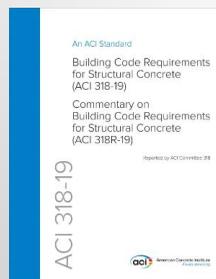
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- Periodic special inspections of sealants or adhesives shall be conducted where sealant or adhesive required by Section 703.7 is applied to mass timber building elements as designated in the approved construction documents.

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## 1901.2 Plain and reinforced concrete



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- Structural concrete shall be designed and constructed in accordance with the requirements of this chapter and ACI 318 as amended in Section 1905 of this code.
- ACI 318-19 Referenced

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## 2303.2 Fire-retardant-treated wood



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- Fire-retardant-treated wood is any wood product that, when impregnated with chemicals by a pressure process or other means during manufacture, shall have, when tested in accordance with ASTM E84 or UL 723, a listed flame spread index of 25 or less.
- Additionally, the ASTM E84 or UL 723 test shall be continued for a 20-minute period and the flame front shall not progress more than 10 1/2 feet beyond the centerline of the burners at any time during the test.

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### 2303.2.3 Fire testing of wood structural panels



- Wood structural panels shall be tested with a ripped or cut longitudinal gap of 1/8 inch

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### 2305 GENERAL DESIGN REQUIREMENTS FOR LATERAL FORCE-RESISTING SYSTEMS

- Structures using wood-frame shear walls or wood-frame diaphragms to resist wind, seismic or other lateral loads shall be designed and constructed in accordance with AWC SDPWS and the applicable provisions of Sections 2305, 2306 and 2307.
- 2021 AWC SDPWS Referenced



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### 2902.1.1 Plumbing Fixture calculations

- Two new Exceptions
- 2. Where multiple-user facilities are designed to serve all genders, the minimum fixture count shall be calculated 100 percent, based on total occupant load. In such multiple-user facilities, each fixture type shall be in accordance with ICC A117.1 and each urinal that is provided shall be located in a stall.
- 3. Distribution of the sexes is not required where single-user water closets and bathing room fixtures are provided in accordance with Section 2902.1.2.



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### 2902.1.2 Single-user toilet and bathing room fixtures



- The plumbing fixtures located in single-user toilet and bathing rooms, including family or assisted-use toilet and bathing rooms that are required by Section 1110.2.1, shall contribute toward the total number of required plumbing fixtures for a building or tenant space.

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### 2902.1.2 Single-user toilet and bathing room fixtures



- Single-user toilet and bathing rooms, and family or assisted-use toilet rooms and bathing rooms shall be identified as being available for use by all persons regardless of their sex.
- The total number of fixtures shall be permitted to be based on the required number of separate facilities or based on the aggregate of any combination of single-user or separate facilities.

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### 2902.2 Separate facilities

- Where plumbing fixtures are required, separate facilities shall be provided for each sex.
- New Exceptions:
  - 5. Separate facilities shall not be required to be designated by sex where single-user toilets rooms are provided in accordance with Section 2902.1.2.



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### 2902.2 Separate facilities

- 6. Separate facilities shall not be required where rooms having both water closets and lavatory fixtures are designed for use by both sexes and privacy for water closets are installed in accordance with Section 405.3.4 of the International Plumbing Code.
- Urinals shall be located in an area visually separated from the remainder of the facility or each urinal that is provided shall be located in a stall.



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### ] 2902.3.3 Location of toilet facilities in occupancies other than malls



- New Exception:
  - 2. The location and maximum distances of travel to required public and employee facilities in Group S occupancies shall be permitted to exceed that required by this section, provided that the location and maximum distances of travel are approved.

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## 2903 INSTALLATION OF FIXTURES

- Fixtures shall be set level and in proper alignment with reference to adjacent walls.



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## 2903.1.1 Water closets, urinals, lavatories and bidets

- A water closet, urinal, lavatory or bidet shall not be set closer than 15 inches from its center to any side wall, partition, vanity or other obstruction.
- Where partitions or other obstructions do not separate adjacent fixtures, fixtures shall not be set closer than 30 inches center to center between adjacent fixtures.
- There shall be not less than a 21-inch clearance in front of a water closet, urinal, lavatory or bidet to any wall, fixture or door.



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## 2903.1.1 Water closets, urinals, lavatories and bidets

- Water closet compartments shall be not less than 30 inches in width and not less than 60 inches in depth for floor-mounted water closets and not less than 30 inches in width and 56 inches in depth for wall-hung water closets.
- Exception: An accessible children's water closet shall be set not closer than 12 inches from its center to the required partition or to the wall on one side.



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## 2903.1.2 Public lavatories

- In employee and public toilet rooms, the required lavatory shall be located in the same room as the required water closet.



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### 2903.1.3 Location of fixtures and piping

- Piping, fixtures or equipment shall not be located in such a manner as to interfere with the normal operation of windows, doors or other means of egress openings.



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### 2903.1.4 Water closet compartment

- Each water closet utilized by the public or employees shall occupy a separate compartment with walls or partitions and a door enclosing the fixtures to ensure privacy.



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### 2903.1.5 Urinal partitions

- Each urinal utilized by the public or employees shall occupy a separate area with walls or partitions to provide privacy.
- The horizontal dimension between walls or partitions at each urinal shall be not less than 30 inches.
- The walls or partitions shall begin at a height not greater than 12 inches from and extend not less than 60 inches above the finished floor surface.



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### 2903.1.5 Urinal partitions

- The walls or partitions shall extend from the wall surface at each side of the urinal not less than 18 inches or to a point not less than 6 inches beyond the outermost front lip of the urinal measured from the finished backwall surface, whichever is greater.



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### 3001.2

## Emergency elevator communication systems for the deaf, hard of hearing and speech impaired

- An emergency two-way communication system shall be provided.
- The system shall provide visible text and audible modes that meet all of the following requirements:
  1. When operating in each mode, include a live interactive system that allows back and forth conversation between the elevator occupants and emergency personnel.
  2. Is operational when the elevator is operational.
  3. Allows elevator occupants to select the text-based or audible mode depending on their communication needs to interact with emergency personnel.



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## Definitions

### 202



- SPECIAL EVENT STRUCTURE.
- Any ground-supported structure, platform, stage, stage scaffolding or rigging, canopy, tower or similar structure supporting entertainment-related equipment or signage.

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## 3103

## TEMPORARY STRUCTURES

- The provisions of Sections 3103.1 through 3103.4 shall apply to structures erected for a period of less than 180 days.
- **Special event structures**, tents, umbrella structures and other membrane structures erected for a period of less than 180 days shall also comply with the International Fire Code.
- Those erected for a longer period of time shall comply with applicable sections of this code.



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## 3114

## PUBLIC USE RESTROOM BUILDINGS IN FLOOD HAZARD AREAS



- For the purpose of this section, public restroom buildings are located on publicly owned lands in flood hazard areas and intended for public use.
- Public restroom buildings and portions of other buildings that contain public restrooms are limited to toilet rooms, bathrooms, showers and changing rooms.

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### 3114 PUBLIC USE RESTROOM BUILDINGS IN FLOOD HAZARD AREAS



- Public restroom buildings and portions of buildings that contain public restrooms shall comply with the requirements of this section.
- Public-use restrooms that are not elevated or dry flood-proofed in accordance with Section 1612 shall comply with Section 3114.2.
- Portions of buildings that include uses other than public-use toilet rooms, bathrooms, showers and changing rooms shall comply with Section 1612.

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### 202 Definitions

- INTERMODAL SHIPPING CONTAINER.
- A six-sided steel unit originally constructed as a general cargo container used for the transport of goods and materials.



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### 3115 INTERMODAL SHIPPING CONTAINERS

- The provisions of Section 3115 and other applicable sections of this code shall apply to intermodal shipping containers that are repurposed for use as buildings or structures, or as a part of buildings or structures.



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### 3313 WATER SUPPLY FOR FIRE PROTECTION

- An approved water supply for fire protection, either temporary or permanent, shall be made available as soon as combustible building materials arrive on the site, on commencement of vertical combustible construction, and on installation of a standpipe system in buildings under construction, in accordance with Sections 3313.2 through 3313.5.



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## 3313 WATER SUPPLY FOR FIRE PROTECTION



- Exception:
- The fire code official is authorized to reduce the fire-flow requirements for isolated buildings or a group of buildings in rural areas or small communities where the development of full fire-flow requirements is impractical.

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## 3313.2 Combustible building materials

- When combustible building materials of the building under construction are delivered to a site, a minimum fire flow of 500 gallons per minute shall be provided.
- The fire hydrant used to provide this fire flow supply shall be within 500 feet of the combustible building materials, as measured along an approved fire apparatus access lane.



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## 3313.2 Combustible building materials

- Where the site configuration is such that one fire hydrant cannot be located within 500 feet of all combustible building materials, additional fire hydrants shall be required to provide coverage in accordance with this section.



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## 3313.3 Vertical construction of Types III, IV and V construction

- Prior to commencement of vertical construction of Type III, IV or V buildings that utilize any combustible building materials, the fire flow required by Sections 3313.3.1 through 3313.3.3 shall be provided, accompanied by fire hydrants in sufficient quantity to deliver the required fire flow and proper coverage.



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### 3313.3.1 Fire separation up to 30 feet

- Where a building of Type III, IV or V construction has a fire separation distance of less than 30 feet from property lot lines, and an adjacent property has an existing structure or otherwise can be built on, the water supply shall provide either a minimum of 500 gallons per minute, or the entire fire flow required for the building when constructed, whichever is greater.



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### 3313.3.2 Fire separation of 30 feet up to 60 feet

- Where a building of Type III, IV or V construction has a fire separation distance of 30 feet up to 60 feet from property lot lines, and an adjacent property has an existing structure or otherwise can be built on, the water supply shall provide a minimum of 500 gallons per minute, or 50 percent of the fire flow required for the building when constructed, whichever is greater.



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### 3313.3.3 Fire separation of 60 feet or greater

- Where a building of Type III, IV or V construction has a fire separation of 60 feet or greater from a property lot line, a water supply of 500 gallons per minute shall be provided.



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### 3313.4 Vertical construction, Types I and II construction

- If combustible building materials are delivered to the construction site, water supply in accordance with Section 3313.2 shall be provided.
- Additional water supply for fire flow is not required prior to commencing vertical construction of Type I and II buildings.



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## 3313.5 Standpipe supply

- Regardless of the presence of combustibile building materials, the construction type or the fire separation distance, where a standpipe is required in accordance with Section 3313, a water supply providing a minimum flow of 500 gallons per minute shall be provided.
- The fire hydrant used for this water supply shall be located within 100 feet of the fire department connection supplying the standpipe.



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## APPENDIX B BOARD OF APPEALS

- A board of appeals shall be established within the jurisdiction for the purpose of hearing applications for modification of the requirements of this code pursuant to the provisions of Section 113.
- The board shall be established and operated in accordance with this section, and shall be authorized to hear evidence from appellants and the building official pertaining to the application and intent of this code for the purpose of issuing orders pursuant to these provisions.



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## B101.2 Application for appeal

- Any person shall have the right to appeal a decision of the building official to the board. An application for appeal shall be based on a claim that the intent of this code or the rules legally adopted here-under have been incorrectly interpreted, the provisions of this code do not fully apply or an equally good or better form of construction is proposed.
- The application shall be filed on a form obtained from the building official within 30 days after the notice was served.

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## B101.2.1 Limitation of authority

- The board shall not have authority to waive requirements of this code or interpret the administration of this code.



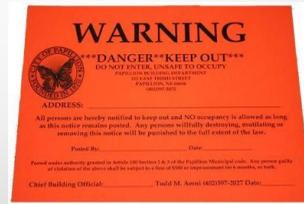
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## B101.2.2 Stays of enforcement

- Appeals of notice and orders, other than Imminent Danger notices, shall stay the enforcement of the notice and order until the appeal is heard by the board.



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## B101.3 Membership of board

- The board shall consist of five voting members appointed by the chief appointing authority of the jurisdiction. Each member shall serve for [INSERT NUMBER OF YEARS] years or until a successor has been appointed.
- The board members' terms shall be staggered at intervals, so as to provide continuity.
- The building official shall be an ex officio member of said board but shall not vote on any matter before the board.



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## B101.3.1 Qualifications

- The board shall consist of five individuals, who are qualified by experience and training to pass on matters pertaining to building construction and are not employees of the jurisdiction.



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## B101.3.2 Alternate members

- The chief appointing authority is authorized to appoint two alternate members who shall be called by the board chairperson to hear appeals during the absence or disqualification of a member.
- Alternate members shall possess the qualifications required for board membership, and shall be appointed for the same term or until a successor has been appointed.



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### B101.3.3 Vacancies

- Vacancies shall be filled for an unexpired term in the same manner in which original appointments are required to be made.



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### B101.3.4 Chairperson

- The board shall annually select one of its members to serve as chairperson.



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### B101.3.5 Secretary

- The chief appointing authority shall designate a qualified clerk to serve as secretary to the board.
- The secretary shall file a detailed record of all proceedings, which shall set forth the reasons for the board's decision, the vote of each member, the absence of a member and any failure of a member to vote.



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### B101.3.6 Conflict of interest

- A member with any personal, professional or financial interest in a matter before the board shall declare such interest and refrain from participating in discussions, deliberations and voting on such matters.



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## B101.3.7 Compensation of members

- Compensation of members shall be determined by law.



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## B101.3.8 Removal from the board

- A member shall be removed from the board prior to the end of their term only for cause.
- Any member with continued absence from regular meeting of the board may be removed at the discretion of the chief appointing authority.



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## B101.4 Rules and procedures

- The board shall establish policies and procedures necessary to carry out its duties consistent with the provisions of this code and applicable state law.
- The procedures shall not require compliance with strict rules of evidence, but shall mandate that only relevant information be presented.



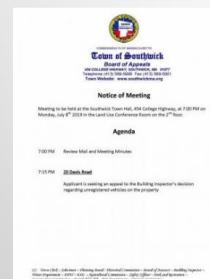
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## B101.5 Notice of meeting

- The board shall meet upon notice from the chairperson, within 10 days of the filing of an appeal or at stated periodic intervals.



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## B101.5.1 Open hearing

- All hearings before the board shall be open to the public. The appellant, the appellant's representative, the building official and any person whose interests are affected shall be given an opportunity to be heard.



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## B101.5.2 Quorum

- Three members of the board shall constitute a quorum.
- When five members are not present to hear an appeal, either the appellant or the appellant's representative shall have the right to request a postponement of the hearing.



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## B101.6 Legal counsel

- The jurisdiction shall furnish legal counsel to the board to provide members with general legal advice concerning matters before them for consideration.
- Members shall be represented by legal counsel at the jurisdiction's expense in all matters arising from service within the scope of their duties.



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## B101.7 Board decision

- The board shall only modify or reverse the decision of the building official by a concurring vote of three or more members.



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## B101.7.1 Resolution

- The decision of the board shall be by resolution.
- Every decision shall be promptly filed in writing in the office of the building official within three days and shall be open to the public for inspection.
- A certified copy shall be furnished to the appellant or the appellant's representative and to the building official.



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## B101.7.2 Administration

- The building official shall take immediate action in accordance with the decision of the board.



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## B101.8 Court review

- Any person, whether or not a previous party of the appeal, shall have the right to apply to the appropriate court for a writ of certiorari to correct errors of law.
- Application for review shall be made in the manner and time required by law following the filing of the decision in the office of the chief administrative officer.



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## APPENDIX O PERFORMANCE-BASED APPLICATION

- The following administrative provisions are excerpted from the ICC Performance Code for Buildings and Facilities and can be used in conjunction with the Alternate Methods provisions in Chapter 1, or for a review of submittals requiring a rational analysis or performance-based design.
- These provisions provide an established framework for the building official in terms of the design expertise needed, the necessary submittals, a review framework and related items.



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